Please print or type with ELITE type (12 characters/inch) in the unshaded areas only.

Form Approved OMB No. 158-S79016
SSA No. 0246-EPA-OT

EPA U.S. ENVIRONMENTAL PROTECTION AGENCY
NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

Walter Harris 11-17-82

INSTALLATION'S EPA I.D. NO.

I. NAME OF INSTALLATION

II. INSTALLATION MAILING ADDRESS

III. LOCATION OF INSTALLATION

PLEASE PLACE LABEL IN THIS SPACE

INSTRUCTIONS: If you received a preprinted label, affix it in the space at left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave Items I, II, and III below blank. If you did not receive a preprinted label, complete all items. "Installation" means a single site where hazardous waste is generated, treated, stored and/or disposed of, or a transporter's principal place of business. Please refer to the INSTRUCTIONS FOR FILING NOTIFICATION before completing this form. The information requested herein is required by law *(Section 3010 of the Resource Conservation and Recovery Act).*

DETACH

FOR OFFICIAL USE ONLY

COMMENTS: C

INSTALLATION'S EPA I.D. NUMBER	APPROVED	DATE RECEIVED (yr., mo., & day)
F ILD980398028 T/A C 1	A	821118

I. NAME OF INSTALLATION

KERR-MCGEE CHEMICAL CORPORATION

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX: 798 FACTORY STREET

CITY OR TOWN: WEST CHICAGO — ST.: IL — ZIP CODE: 60185

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER: 798 FACTORY STREET

CITY OR TOWN: WEST CHICAGO — ST.: IL — ZIP CODE: 60185

IV. INSTALLATION CONTACT

NAME AND TITLE *(last, first, & job title)*: HARRIS, WALTER PLANT MANAGER

PHONE NO. *(area code & no.)*: 312-231-0762

V. OWNERSHIP

DETACH

A. NAME OF INSTALLATION'S LEGAL OWNER: KERR-MCGEE CHEMICAL CORPORATION

B. TYPE OF OWNERSHIP *(enter the appropriate letter into box)*: M

F = FEDERAL
M = NON-FEDERAL

VI. TYPE OF HAZARDOUS WASTE ACTIVITY *(enter "X" in the appropriate box(es))*

- [X] A. GENERATION
- [ ] B. TRANSPORTATION *(complete item VII)*
- [ ] C. TREAT/STORE/DISPOSE
- [ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION *(transporters only – enter "X" in the appropriate box(es))*

- [ ] A. AIR
- [ ] B. RAIL
- [ ] C. HIGHWAY
- [ ] D. WATER
- [ ] E. OTHER *(specify)*:

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your Installation's EPA I.D. Number in the space provided below.

RECEIVED 11/18/82

- [X] A. FIRST NOTIFICATION
- [ ] B. SUBSEQUENT NOTIFICATION *(complete item C)*

C. INSTALLATION'S EPA I.D. NO.:

IX. DESCRIPTION OF HAZARDOUS WASTES

Please go to the reverse of this form and provide the requested information.

CONTINUE ON REVERSE

I.D. -- FOR OFFICIAL USE ONLY

S												T/A	C
W													1
1	2									13	14	15	

IX. DESCRIPTION OF HAZARDOUS WASTES *(continued from front)*

A. HAZARDOUS WASTES FROM NON–SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.31 for each listed hazardous waste from non–specific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
F003					
7	8	9	10	11	12

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four–digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
U134	U167	U188	U122	P120	P106
37	38	39	40	41	42
43	44	45	46	47	48

D. LISTED INFECTIOUS WASTES. Enter the four–digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

E. CHARACTERISTICS OF NON–LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non–listed hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 – 261.24.)*

[X] 1. IGNITABLE (D001)	[X] 2. CORROSIVE (D002)	[X] 3. REACTIVE (D003)	[X] 4. TOXIC (D000)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE *(type or print)*	DATE SIGNED
Walter Harris	Walter Harris Plant Manager	11/17/82

Please print or type with ELITE type *(12 characters/inch)* in the unshaded areas only.

Form Approved OMB No. 158-S79016
GAO No. 0246-EPA-OT

EPA U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

INSTALLATION'S EPA I.D. NO.

I. NAME OF INSTALLATION

II. INSTALLATION MAILING ADDRESS

III. LOCATION OF INSTALLATION

PLEASE PLACE LABEL IN THIS SPACE

Walter M 11-17-82 ✓

COPY

07 DEC 1982

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FOR OFFICIAL USE ONLY

COMMENTS

C

INSTALLATION'S EPA I.D. NUMBER	T/A	C	APPROVED	DATE RECEIVED (yr., mo., & day)
F ILD980398028		1	A	821118

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CITY OR TOWN	ST.	ZIP CODE
4 WEST CHICAGO	IL	60185

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER
5 798 FACTORY STREET

CITY OR TOWN	ST.	ZIP CODE
6 WEST CHICAGO	IL	60185

Dupage 043

IV. INSTALLATION CONTACT

NAME AND TITLE *(last, first, & job title)*	PHONE NO. *(area code & no.)*
2 HARRIS, WALTER PLANT MANAGER	312-231-0762

V. OWNERSHIP

A. NAME OF INSTALLATION'S LEGAL OWNER

8 KERR-MCGEE CHEMICAL CORPORATION

B. TYPE OF OWNERSHIP *(enter the appropriate letter into box)*

F = FEDERAL
M = NON-FEDERAL

M

VI. TYPE OF HAZARDOUS WASTE ACTIVITY *(enter "X" in the appropriate box(es))*

- [X] A. GENERATION
- [ ] B. TRANSPORTATION *(complete item VII)*
- [ ] C. TREAT/STORE/DISPOSE
- [ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION *(transporters only — enter "X" in the appropriate box(es))*

- [ ] A. AIR
- [ ] B. RAIL
- [ ] C. HIGHWAY
- [ ] D. WATER
- [ ] E. OTHER *(specify)*:

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your Installation's EPA I.D. Number in the space provided below.

RECEIVED 11/18/82

12-6-82 JB

- [X] A. FIRST NOTIFICATION
- [ ] B. SUBSEQUENT NOTIFICATION *(complete item C)*

C. INSTALLATION'S EPA I.D. NO.

IX. DESCRIPTION OF HAZARDOUS WASTES

Please go to the reverse of this form and provide the requested information.

D. – FOR OFFICIAL USE ONLY

S													T/A	C
W														1
1	2										13		14	15

IX. DESCRIPTION OF HAZARDOUS WASTES *(continued from front)*

A. HAZARDOUS WASTES FROM NON–SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.31 for each listed hazardous waste from non–specific sources your installation handles. Use additional sheets if necessary.

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F003					
7	**8**	**9**	**10**	**11**	**12**

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[X] 1. IGNITABLE (D001)	[X] 2. CORROSIVE (D002)	[X] 3. REACTIVE (D003)	[X] 4. TOXIC (D000)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE *(type or print)*	DATE SIGNED
Walter Harris	Walter Harris Plant Manager	11/17/82

This site is exempt from the requirement to file the 1989 Hazardous Waste Report because:

- the site was not a RCRA Large Quantity Generator in 1989,

  AND

- the site did not treat, store, or dispose of RCRA hazardous wastes on site in units subject to RCRA permitting requirements in 1989.

It is expected that this site will remain exempt from the requirement to file the Hazardous Waste Report:

Check one:

- [X] For 1989 only
- [ ] Permanently
- [ ] Other (Explain: _____)

EPA ID | I | L | D | 9 | 8 | 0 | 3 | 9 | 8 | 0 | 2 | 8 |

Site Name KERR-McGEE CHEMICAL CORPORATION

Site Location Address 798 Factory Street

Site Location Address West Chicago, IL 60185

Contact Name: Mark Krippel

Phone Number of Contact (312) 231-0762

out 8/23 SA

Ask IEPA how they are classifying Co. is nonoperating

Place
25¢
Stamp
Here

U.S. EPA REGION V

RCRA ACTIVITIES

WASTE MANAGEMENT DIVISION

POST OFFICE BOX A3587

CHICAGO, IL 60690

CITY STATE ZIP

EPA

ACKNOWLEDGEMENT OF NOTIFICATION OF HAZARDOUS WASTE ACTIVITY
(VERIFICATION)

This is to acknowledge that you have filed a Notification of Hazardous Waste Activity for the installation located at the address shown in the box below to comply with Section 3010 of the Resource Conservation and Recovery Act *(RCRA)*. Your EPA Identification Number for that installation appears in the box below. The EPA Identification Number must be included on all shipping manifests for transporting hazardous wastes; on all Annual Reports that generators of hazardous waste, and owners and operators of hazardous waste treatment, storage and disposal facilities must file with EPA; on all applications for a Federal Hazardous Waste Permit; and other hazardous waste management reports and documents required under Subtitle C of RCRA.

EPA I.D. NUMBER ➤ ILD980398028

KERR-MCGEE CHEMICAL CORPORATION
798 FACTORY ST
WEST CHICAGO IL 60185

INSTALLATION ADDRESS ➤

798 FACTORY STREET
WEST CHICAGO IL 60185

EPA Form 8700-12B (4-80)

12/14/82

M 12-16-82

PART A FILE ILD 980398028 HWEB

KERR-McGEE CHEMICAL CORPORATION
KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

July 2, 1985

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Basil G. Constantelos, Director
Waste Management Division
U.S. Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, Illinois 60604

Dear Mr. Constantelos:

I am enclosing for your information, a copy of the Consent Decree between the City of West Chicago and Kerr-McGee Chemical Corporation. As you will see, the Consent Decree allocates responsibility for the clean-up of Reed-Keppler Park and the West Chicago Sewage Treatment Plant, defines the criteria to guide clean-up, and establishes a schedule for further action. The Consent Decree is dated June 18, 1985 and Judge McGarr signed the Consent Decree and Dismissal Order on June 20, 1985.

Should you have any questions or need additional information, please contact me.

Sincerely,

I. L. Denny

I. L. Denny

ILD:ns

Enclosure

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

THE CITY OF WEST CHICAGO, Plaintiff, v. KERR MCGEE CHEMICAL CORPORATION, Defendant.	)	No. 80 C 3357

CONSENT DECREE AND
DISMISSAL ORDER

This matter coming before the Court for entry of a Consent Decree, and the Court being advised that the parties have reached an agreement to resolve their differences.

THE COURT FINDS:

1. That it has jurisdiction of the parties and subject matter.

2. That the parties have entered into an agreement dated June 18, 1985 which is attached hereto and made a part hereof.

3. That the parties intend to be bound by said agreement.

IT IS HEREBY ORDERED ADJUDGED AND DECREED:

1. That this matter is dismissed with prejudice, except for the enforement of the agreement dated June 18, 1985.

2. That the Court shall retain jurisdiction of this matter to the extent necessary to enforce said agreement.

_____ ENTER: _____

DATE Judge

CONSENT DECREE

This Agreement made this 18th day of June, 1985, between the City of West Chicago ("City"), an Illinois municipal corporation, and Kerr-McGee Chemical Corporation ("Kerr-McGee"), a Delaware corporation licensed to do business in Illinois.

WHEREAS, Kerr-McGee is the owner of certain property within the City of West Chicago; said property being formerly used as a thorium ore processing facility; and

WHEREAS, in the past thorium-bearing materials have been identified at various locations including private properties, public ways, Reed-Keppler Park and the site of the present City wastewater treatment plant; and

WHEREAS, it appears in the best interests of the City, Kerr-McGee and the public to remove these thorium-bearing materials from their present locations; and

WHEREAS, the City and Kerr-McGee are parties to a lawsuit pending in the United States District Court for the Northern District of Illinois concerning the condition of the factory site owned by Kerr-McGee and various off-site locations containing thorium-bearing materials; and

WHEREAS, both parties wish to resolve the aforementioned issues and avoid the expense and uncertainties of

litigation, and desire to settle the lawsuit according to the terms and conditions set forth herein; and

WHEREAS, both parties believe an agreement and settlement concerning the aforementioned issues to be in their mutual interests; and

WHEREAS, the parties do not, by this agreement, make any admission or concession of liability for any of the matters contained herein.

NOW, THEREFORE, be it resolved that in consideration of the premises and agreements contained herein the City and Kerr-McGee hereby agree as follows:

1. By December 31, 1985, Kerr-McGee will complete its removal of the thorium-bearing materials from the locations within the City as agreed earlier by the parties in "Program Outline: Off-Site Thorium Removal" (June 25, 1984) (Exhibit A).

2. By September 30, 1985, Kerr-McGee shall submit to the City, a detailed plan for the removal of the thorium-bearing soil located at the Reed-Keppler Park site ("Park Plan"). The Park Plan will include the following provisions:

a) Kerr-McGee, at its own expense, will excavate the thorium-bearing materials to a level measuring thirty micro Roentgen per hour (30 uR/hr.) at one (1) meter above the surface.

b) Kerr-McGee, at its own expense, will transport

the excavated materials to the Kerr-McGee West Chicago facility site.

c) The City will cooperate and assist Kerr-McGee in the execution of the Park Plan in such particulars as traffic management and site access control.

d) Kerr-McGee, with the cooperation of the City, will seek any appropriate and necessary governmental approvals for the execution of this plan within forty-five (45) days from July 1, 1986 if the Nuclear Regulatory Commission Atomic Safety Licensing Board ("ASLB") has not by that date issued a final and affirmed order determining the disposition of the waste materials now located on the Kerr-McGee West Chicago facility site. If such an order has been issued and affirmed by July 1, 1986, the Park Plan will be implemented by Kerr-McGee consistent with such an order.

e) In any event, the excavation and transportation of the materials will be completed before December 31, 1987, provided that appropriate NRC and/or USEPA regulatory approvals are received by April 1, 1987.

f) The City will be responsible for the design and implementation of any necessary restorative work, at its own cost, after the completion of Kerr-McGee's Park Plan.

3. By September 30, 1985, Kerr-McGee shall submit to

the City a detailed plan for removal of the thorium-bearing soil located at the City's wastewater treatment plant site ("Plant Plan"). The Plant Plan will include the following provisions:

a) Kerr-McGee, at its own expense, will excavate the thorium-bearing materials to a level measuring thirty micro Roentgens per hour (30 uR/hr) at one (1) meter above the surface.

b) Kerr-McGee, at its own expense, will transport the excavated materials to the Kerr-McGee West Chicago facility site.

c) The City will cooperate and assist Kerr-McGee in the execution of the Plant Plan in such particulars as traffic management and site access control.

d) Kerr-McGee, with the cooperation of the City, will seek any appropriate and necessary governmental approvals for the execution of this plan within forty-five (45) days from July 1, 1986 if the Nuclear Regulatory Commission Atomic Safety Licensing Board ("ASLB") has not by that date issued a final and affirmed order determining the disposition of the waste materials now located on the Kerr-McGee West Chicago facility site. If such an order has been issued and affirmed by July 1, 1986, the Plant Plan will be implemented by Kerr-McGee consistent with such an order.

e) In any event, the excavation and transportation of

the materials will be completed before December 31, 1987, provided that appropriate NRC and/or USEPA regulatory approvals are received by April 1, 1987.

f) The City will be responsible for the design and implementation of any necessary restorative work, at its own cost, after the completion of Kerr-McGee's Plant Plan.

4. It is anticipated by the parties that the thorium-bearing material be removed from the various locations within the City pursuant to Paragraphs 1, 2 and 3 herein and will be placed by Kerr-McGee on its facility site within the City. If it is ultimately determined the thorium-bearing material is to be removed from the present Kerr-McGee site to another location, the City will participate in the cost of the said removal up to a maximum cost of Two Hundred Fifty Thousand Dollars ($250,000). The City would be obligated to pay only the portion of removal costs attributed to the contaminated soil removed pursuant to this agreement and not to any material otherwise present on the Kerr-McGee site which is required to be relocated. "Removal costs" are those reasonable costs incurred in the pickup, transport and unloading of the materials. The City will pay its proportionate cost of said removal to Kerr-McGee beginning one (1) year after the removal commences and for a period of five (5) years at a rate not to exceed Fifty Thousand Dollars ($50,000.00) per year. Kerr-McGee will cover all costs for

the removal at the time incurred. Kerr-McGee shall continue to act diligently in seeking regulatory approval from the relevant governmental agencies for permanent stabilization of the contaminated material.

5. Kerr-McGee shall transfer to the City that part of Kerr-McGee's Factory Site and Intermediate Site property which is determined by the relevant governmental agency(ies) to be free of contaminated material and available for use without restriction.

6. On June 20, 1985, the City will dismiss with prejudice the pending lawsuit in the United States District Court for the Northern District of Illinois (City of West Chicago v. Kerr-McGee Chemical Corporation, No. 80 C 3357). The parties will cooperate with each other in the implementation of the various tasks to be undertaken by each pursuant to this agreement.

CITY OF WEST CHICAGO

By: A. Eugene Rennels
A. Eugene Rennels, Mayor

ATTEST:
Patricia A. Rose
City Clerk

KERR-McGEE CHEMICAL CORPORATION

By: J. L. Denny

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: SEP 24 1990

SUBJECT: Kerr McGee Sites - "Mixed Waste" Review

FROM: Sally Swanson, Acting Chief
RCRA Enforcement Branch

TO: James Mayka, Chief
IL/IN Section
Office of Superfund

We have completed a technical review of the wastes generated at or from Kerr McGee's West Chicago Facility, as requested in your July 11, 1990 memorandum. This review is based on information from the following documents: Kerr McGee's West Chicago Project Engineering Report (1986) and John Stauter's, Vice-President of Environmental Services for Kerr McGee Chemical Corporation (KMCC), response to an information request pursuant to Section 3007 of RCRA and Section 104(e) of CERCLA, July 5, 1990, regarding operations at Kerr McGee's West Chicago Rare Earths Facility. The inquiry was initiated to determine whether or not any of the wastes could be classified as "mixed wastes", thus allowing regulation under RCRA. Wastes classified as "mixed wastes" must meet the following regulatory requirements: 1) be defined as a solid waste (40 CFR 261.2), 2) be defined as a hazardous waste (40 CFR 261.3), and 3) possess a radioactive component as defined by the Atomic Energy Act (AEA). Our review did not identify any wastes that could be regulated as "mixed wastes" under RCRA. However, we found notable deficiencies in the information provided by KMCC, specifically information concerning processes and wastes generated at the West Chicago Facility, as requested pursuant to Section 3007 of RCRA. These deficiencies should be addressed before a definitive answer to your question concerning the presence or absence of "mixed wastes" be given.

There are several sites identified by KMCC which have received waste from the Facility's rare earth ore and manufacturing processes in West Chicago from 1932 to 1973. The sites include: Kerr McGee's West Chicago Rare Earths Facility, a 43 acre site consisting of the "Factory" site, an adjacent "Intermediate" site, and the "Disposal" site and several off-site areas which include municipal and residential localities within the city of West Chicago.

The following determinations have been made concerning pertinent technical and regulatory issues related to the waste generated at or from Kerr McGee's Rare Earths Facility:

OFF-SITE LOCATIONS

A) Wastes identified by KMCC at the off-site locations are thorium mill tailings from the milling of monazite, $(Ce,La,Nd,Th)PO_4$, with an indeterminate amount of gypsum, $CaSO_4(2H_2O)$, from the manufacturing of hydrofluoric acid. The thorium mill tailings, including hazardous constituents contained within, can not be considered as "mixed wastes" because thorium mill tailings are "by-product material" and are thus excluded from the set of "solid wastes" regulated by RCRA (40 CFR 261.4(a)(4)). Thorium and uranium mill tailings are within the NRC's licensing authority by AEC's definition of by-product material, namely, "the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material" (42 USC 2014(e)(2)) ("section 11(e)(2)").

KMCC has not addressed or provided any information describing the radioactivity or hazardous constituents identified with gypsum wastes mixed with the thorium mill tailings. The gypsum wastes could be contaminated with stable and unstable daughter decay products of thorium. Large amounts of gypsum wastes were generated during "the war years" at the Facility. The total amount of gypsum used as fill-material at these sites is not known.

B) High concentration levels of lead (Pb), exceeding 2,000 ppm, are found in the thorium mill tailings from these sites. KMCC contracted EAL Corporation of Richmond, California to evaluate 17 boring samples for priority pollutants and EP toxicity analyses, using methods specified by EPA publication SW-846. No samples displayed the EP toxicity characteristics for the inorganic contaminants. No priority pollutants were identified from these wastes.

The analytical results obtained by EAL's characterization of the waste with respect to EP toxicity and priority pollutants were from samples collected using a "pure" random sampling method, as outlined in EPA publication SW-846. We are unclear why this method of sample collection was used because KMCC's contractor, Applied Science Laboratory of Oak Ridge, Tennessee, clearly showed that the radioactive wastes which KMCC planned to remove were "stratified" within the fill-material. An attempt to use the "stratified" random sampling method might better defined the nature of the waste as it pertains to EP toxicity and the presence of priority pollutants. Using a "stratified" random sampling may not identify any priority pollutants or EP toxicity within the fill-material, but the sampling technique utilized by KMCC may not properly characterize the wastes.

C) Analyses of boring samples from these sites did show varying concentration levels of methylene chloride and acetone ranging

from <20 ppb (below the detection limit) to >300 ppb. KMCC has stated that they believe that the source of the solvent was from the field decontamination of the sampling equipment. These solvents were used by the Applied Science Laboratory during their sample collecting sessions. However, it is difficult for us to fully accept this explanation without having a complete summary of the KMCC's milling and manufacturing processes involved in the generation of the waste, particularly those chemicals used in the maintenance and cleaning processes. Methylene chloride and acetone are common cleaning solvents used in many industrial processes. Solvents used in these processes were never discussed in Jerry Stauter's information request pursuant to Section 3007 of RCRA. Until KMCC provides us with additional information, determining the source of the solvents should remain an important issue.

Rare Earths Facility Site

A) Wastes identified by KMCC at the Facility site are thorium mill tailings from the milling of monazite, $(Ce,La,Nd,Th)PO_4$, and mill tailings from the milling of bastnaesite, $(Ce,La)CO_3(F,OH)$, a non-thorium-bearing rare earth ore. Two different waste piles were generated from the processing of these rare earth ores. One type of waste pile consisted of mill tailings from non-radioactive and radioactive rare earth ores. A second type of waste pile consisted of dredged sludge or sediment wastes from five waste disposal ponds. During the operation of the Facility, process waters were allowed to infiltrate into the underlying glacial aquifer from the waste disposal ponds. No effort was made to separate the wastes generated from the milling or manufacturing processes associated with the ores.

To characterize the waste on the Facility site, KMCC collected soil, core, and water samples totalling 612 samples from the mill tailing piles, sludge piles, sludge within the ponds, cores from facility areas, and disposal pond waters. KMCC used a "pure" random sampling method to determine the number and location of the samples, as described by EPA publication SW-846. KMCC used their own analytical facility in Tulsa, Oklahoma, to analyze the samples collected from the Facility site.

As was stated previously, the thorium mill tailings, including hazardous constituents contained within, can not be considered as "mixed wastes" because thorium mill tailings are excluded from the set of "solid wastes" regulated by RCRA (40 CFR 261.4(a)(4)). Thorium and uranium mill tailings are within the NRC's licensing authority by AEC's definition of by-product material, namely, "the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material" (42 USC 2014(e)(2)) ("section 11(e)(2)"). In addition, "solid wastes" generated from the extraction, beneficiation, and processing of bastnaesite ores are

excluded from the set of "hazardous wastes" regulated by RCRA (40 CFR 261.4(b)).

Based on the statistical sampling method employed by KMCC, no waste piles, sediments, or water samples showed EP toxicity characteristics or indicated the presence of any priority pollutants in the samples analyzed. Nevertheless, it should be noted that approximately 15% of the samples from the mill tailing piles did exceed the EP toxic characteristic limit for lead (Pb). KMCC stated that the samples which exceeded the EP toxic limit characteristic for Pb were part of a larger population of samples (21) and only represents extremes or outliers within the sample population. We believe this would be a good assumption if the waste analyzed was from a relatively homogeneous waste pile, as required for the "pure" random sampling method.

Mill tailings waste piles, as described by KMCC, consist of materials with varying chemistries. The wastes were generated from very different milling processes, an acid leach versus a caustic soda digestion process, and different source ores, monazite and bastnaesite. In addition, the assumption that the chemistry of the thorium mill tailings has changed little since emplacement is false, which is assumed when the "pure" random sampling method is utilized. The chemistry of the waste from thorium mill tailings will change because of the relatively short half-lives of radioactive decay products attributed to $_{90}Th^{232}$ and $_{90}Th^{228}$. The thorium decay series begins with $_{90}Th^{232}$ and ends in the formation of $_{82}Pb^{208}$, a stable isotope. Thus, thorium mill tailings disposed of during the early 1950's might have a higher concentration of Pb than wastes generated in the early 1960's. The overall chemistry of bastnaesite waste is unlikely to change with time because the waste contains only minute amounts of thorium.

We believe the "stratified" random sampling method, as outlined in EPA publication SW-846, might better define the nature of the waste as it pertains to EP toxicity and the presence of priority pollutants. The "pure" random sampling method utilized by KMCC should be used only if application of the "stratified" random sampling method is shown to be impractical.

B) Analyses of sludge samples from the disposal ponds did show varying concentrations of methylene chloride. KMCC has stated that they believe that the source of the methylene chloride was from the field decontamination of the sampling equipment. This solvent was used by KMCC during their sample collecting sessions. However, it is difficult for us to fully accept this explanation without having a complete summary of KMCC's milling and manufacturing processes involved in the generation of the waste, particularly those chemicals used in the maintenance and cleaning processes. Methylene chloride is a common cleaning solvent used in many industrial processes. Organic solvents were probably

extensively used in the separation and purification processes associated with the milling of rare earth ores, specifically bastnaesite, but possible wastes generated from these processes are not known. Solvents used in these processes were never alluded to in Jerry Stauter's response to an information request pursuant to Section 3007 of RCRA. Until KMCC provides us with this additional information, determining the source of the solvents should remain an important issue.

C) KMCC notified the US EPA on November 17, 1982, via a Notification of Hazardous Waste Activity, in compliance with Section 3010 of RCRA, that hazardous wastes were being generated at the site. There was no additional correspondence pertaining to the fate of the listed wastes. Generation of these hazardous wastes were never mentioned in Jerry Stauter's response to an information request pursuant to Section 3007 of RCRA. Inquiry for additional information concerning the wastes generated should be made with KMCC.

To conclude, the thorium mill tailings, including hazardous constituents contained within, can not be considered as "mixed wastes" because thorium mill tailings are excluded from the set of "solid wastes" regulated by RCRA. In addition, "solid wastes" generated from the extraction, beneficiation, and processing of bastnaesite ores are excluded from the set of "hazardous wastes" regulated by RCRA. However, we have identified several technical issues that should be addressed before a definitive response to the presence or absence of "mixed wastes" be given. The technical issues include the characterization of gypsum waste possibly contaminated by thorium mill tailings, the presence of methylene chloride and acetone in wastes, the field sampling method chosen by KMCC in the characterization of the wastes, and the notification by KMCC of the generation of hazardous wastes in 1982 at the Facility site.

This review was conducted by Thad Slaughter, RCRA Enforcement, who can be reached at extension 6-4460.

cc: Marc Radell, ORC
Peggy Andrews, ORC

bcc: Gary Schafer, Superfund

	TYP.	AUTH.	IL/IN TECH. ENF. SEC.	MI/WI TECH. ENF. SEC.	OH/MN TECH. ENF. SEC.	IL/MI/WI ENF. PROG. SECTION	IN/MN/OH ENF. PROG. SECTION	RCRA ENF. BR. CHIEF	O. R. A.D.D.	WMD DIR
INIT.	PJC	T.S.	JPM					JPM		
DATE	9/17/90	9/17/90	9/17/90					9/24/90 Acting		